

**Amendments to the Specification:**

I. Please replace the title of the invention as follows:

VACUUM PUMP HAVING SHAFT SEAL TO PREVENT CORROSION AND TO ENSURE SMOOTH OPERATION

II. Please amend the specification as follows:

*A. Please replace Paragraph [0026] with the following rewritten paragraph:*

[0026] 1 oil supply nozzle  
2 shaft  
3 drive gear  
3M male timing gear  
3FM female timing gear  
4 gear box  
5 exhaust plate  
6 seal gas supply port  
7 inner circumferential surface  
8 shaft seal member  
8a, 8b shaft seal member piece  
9 bearing  
10 bearing presser nut  
11 casing  
12 suction plate  
13M, 13FM screw rotor  
131 closed end portion  
132g helical groove portion  
1321 helical land portion  
14 inlet port  
15 discharge port

16M, 16FM bearing member

17 shaft seal structure

18 plate spring

19 O-ring

20 shaft seal space portion

21 seal gas passing port

X<sub>M</sub>, X<sub>FM</sub> axis

X seal gas passing port

*B. Please replace Paragraph [0028] with the following rewritten paragraph:*

[0028] A screw pump body A comprises a pair of screw rotors 13M and 13FM each having a substantially hollow-cylindrical shape with one site closed (a closed portion 131).

*C. Please replace Paragraph [0029], with the following rewritten paragraph:*

[0029] The screw rotor 13M is a first screw rotor having a plurality of helical land portions 132l and a plurality of helical groove portions 132g. The screw rotor 13FM is a second screw rotor having a plurality of helical land portions 132l and a plurality of helical groove portions 132g. These screw rotors 13M and 13FM rotate about two axes X<sub>M</sub> and X<sub>FM</sub> substantially parallel to each other while meshing with each other. In Figures referred to by the specification, the helical land portions 132l and the helical groove portions 132g are schematically shown.

*D. Please replace Paragraph [0030], with the following rewritten paragraph:*

[0030] The screw rotors 13M and 13FM are received in a casing 11 and rotatably supported by a plurality of bearings 9 provided in substantially hollow-cylindrical bearing members 16 (bearing members 16M and 16FM) through shafts 2 supporting the screw rotors 13M and 13FM, respectively. The shafts 2 are attached to inside surfaces of the closed portions 131 of the screw rotors 13M and 13FM, respectively. Timing gears 3M and 3FM are

attached to the shafts 2 at one-end portions closed end portions 131 thereof, respectively, so that the pair of screw rotors 13M and 13FM are synchronously rotated through the timing gears 3M and 3FM.

*E. Please replace Paragraph [0035], with the following rewritten paragraph:*

[0035] Now, referring also to Fig. 2 in addition to Fig. 1, description will be given in detail of a configuration of the shaft seal structure 17 with a centering mechanism. The shaft seal structure 17 forms a static pressure seal and an inert gas such as, for example, a nitrogen gas is introduced into a shaft seal space portion 20 from a seal gas introduction port 6 through the inside of ~~the bearing member 6~~ each of the bearing members 16M and 16FM and the outer circumferential surface of ~~the bearing member 6~~ each of the bearing members 16M and 16FM under a predetermined pressure. The concave portion 20 is circumferentially formed on the outer circumferential surface of each of the bearing members 16M and 16FM. In the concave portion 20 is disposed a substantially hollow-cylindrical shaft seal member 8 in the form of a porous member made of carbon or the like. The shaft seal member 8 includes two substantially hollow-cylindrical shaft seal member pieces 8a and 8b. The two shaft seal member pieces 8a and 8b are juxtaposed in the cylinder axis direction of the bearing member 16M, 16FM while partly overlapping each other. In order to dispose the two shaft seal member pieces 8a and 8b with no clearances in the concave portion 20, a plate spring 18 is provided between the two shaft seal member pieces 8a and 8b for urging the shaft seal member pieces 8a and 8b in extending directions of the shaft 2.